Yuri Aldanov.
January 9, 2022.

Sumerian King List and The Great Pyramid

The Sumerian King List inscribed onto the Weld-Blundell Prism. wikipedia.org

Note: The article contains adapted chapter *Sumerian King List* from the book *[d]nin-ḫur-saĝ: The Treasure of Mankind* by Yuri Aldanov. In the study and interpretation of Sumerian narratives, cuneiform signs, and transliterations were used materials available on the websites of The Pennsylvania Sumerian Dictionary (ePSD)[1] and The Electronic Text Corpus of Sumerian Literature (ETCSL)[2], a project of the University of Oxford.

[1] http://psd.museum.upenn.edu
[2] https://etcsl.orinst.ox.ac.uk

Many may have heard of the *Sumerian King List*. Most likely, they were amazed by the length of these kings' lives and reigns. For example, the third pre-dynastic king of Sumer, En-men-lu-ana from Bad Tiber, ruled for 43,200 years. The prince of the Eridu town and second ruler, Alalgar, is said to have ruled for 36,000 years. Is it possible for a human, or any other creature, to live for tens of thousands of years and fulfill the duties of a ruler? Many scholars believe that such fantastic numbers may have been the result of incorrect translations of the number systems. Besides, not a single confirmation of the existence of these kings has been found in either archaeological excavations, epigraphic inscriptions, or in any other historical sources, except Sumerian inscriptions themselves. Various versions of this list, in which sections were missing or arranged in a different order, and the names, reigns, and details about the kings were different or absent altogether, existed through time. Besides, not a single confirmation of the existence of these kings has been found in either archaeological excavations, nor epigraphic inscriptions, nor in any other historical sources. After all, doesn't it seem suspicious that mention of the Grotto [*eridug*^{ki}] which is located in the Great Pyramid, is listed among the Sumerian king names?[3]

While interpreting this historical artifact, an inaccurate interpretation of just one notion was made, as happened with the KUR sign.[4] The misinterpretation occurred in the very first two *transliterations* of the Sumerian text:

NAM	LUGAL

Most cuneiform signs visually resemble the shape or meaning of the word which they represent. These two signs did not depart from this rule. One of the transliterations of the NAM pictogram *nam* carries the meaning "determined order." The semantic meaning of the phrase "determined order" can be defined as "a defined sequence of actions or steps." How can this concept be reflected in the NAM sign? The pictogram NAM can be conventionally divided into two parts. The divider is the farthest-right vertical bar. An array of six check marks, or six U signs, can be noticed to the right of this bar. This portion of the NAM sign is similar to the SAR sign meaning "to scribe":

[3] The Grotto, which is located under the base of the Great Pyramid of Giza, and its Sumerian name *eridug*^{ki} discussed in the chapter *Urim System* in the second part of the book *^{d}nin-ḫur-saĝ: The Treasure of Mankind.*

[4] The missed meaning "pyramid" of the KUR cuneiform sign is explained in the chapter Exploits of Ninurta and The Pyramid in the second part of the book *^{d}nin-ḫur-saĝ: The Treasure of Mankind*.

SAR sign contains nine checkmarks which probably symbolize cuneiform signs, which are applied to a clay tablet, represented by a square. The defined sequence of signs is information. Thus, we can say that the right side of the NAM sign represents a set of instructions, actions, or commands that must be read or executed in a specific sequence.

The left side (Figure 1) is somewhat more difficult to read. Nevertheless, some semblance of a pattern can be noted in the combination of checkmarks and lines. The first two vertical lines, as they were, pushed two checkmarks to the lower level, and one check mark was raised to the upper horizontal line. The horizontal line probably represents some type of level zero.

Fig. 1.

This sign can schematically reflect the principle of a mechanical music box. A music box generates sounds using a metal comb. Each tooth of the comb is tuned to a specific note. Projections are applied to a rotating metal drum in a specific order and at a certain distance. As the drum rotates, its projections touch the teeth, causing them to vibrate and create sounds.

In the NAM sign, the checkmarks act as musical teeth, and the lines are the projections. The pictogram NAM hides another incredible secret, however. The principle depicted in this sign is well known to those who deal with computers or programming. Data in computer systems is represented by long sequences of 1's and 0's. Each 1 or 0 is called a "bit." To organize information, these long sequences are divided into groups of 8 bits which are called "bytes." Each bit in each byte is assigned a digital value: 1, 2, 4, 8, 16, 32, 64, 128. In computer systems, however, these values do not follow from left to right (1, 2, 4, 8, etc.), but instead from right to left (128, 64, 32, 16, 8, 4, 2, 1).

Offset or position	1	2	3	4	5	6	7	8
Value	128	64	32	16	8	4	2	1

Thus, to represent the number 20, we do not need to write 20 1's. We can simply send the following sequence: 00010100, that is, 0 + 0 + 0 + 16 + 0 + 4 + 0 + 0 = 20:

Offset or position	1	2	3	4	5	6	7	8	
Value	128	64	32	16	8	4	2	1	
Data	0	0	0	1	0	1	0	0	
Calculation	0	0	0	16	0	4	0	0	= 20

How can this principle, which is the basis of modern computing technology, be reflected in the cuneiform signs from an ancient artifact? On the left side of the NAM sign (Figure 2), two check marks are located at the bottom of the image, paired with corresponding vertical lines. The third mark is raised and has no line. If we assume that check marks are bits, and that the presence of a vertical line indicates the state of the bit equal to "1" and its absence is "0", then we get the sequence [000000]110. This sequence encodes the number 6 = 4 + 2 + 0. On the right side of the sign, there are 6 U signs, possibly representing the number 6. Could this be a coincidence? Considering that one of the meanings of this sign "determined order," this seems unlikely. Instead, this appears to be a specially designed pictogram. This fact brings a technical meaning to this expression.

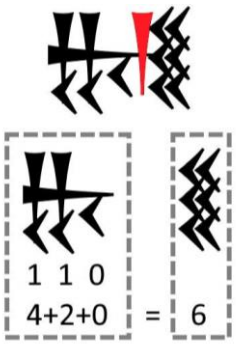
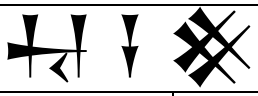


Fig.2. NAM.

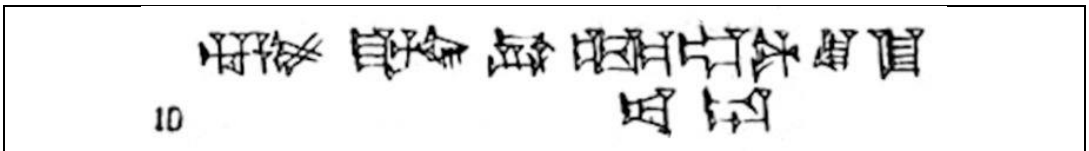
However, according to Stephen Langdon's transcription, the Weld-Blundell prism has the sequence of three characters – HU, NIGIDAMIN, KASKAL, instead of the NAM sign:

		
HU [*pag*]	NIGIDAMIN	KASKAL [*kaskal*]
enclosed	4	way

These signs do not repeat or convey the meaning of the NAM sign given in the Oxford University transcription. Thus, the Sumerian kingship dates theory, which was born due to a pair of signs NAM.LUGAL [*nam-lugal*] and their meaning "kingship," is untenable.

The sign HU/*pag* [enclosed] we met earlier. The ventilation shafts of the Granite and Small chambers, as well as in the name of the Anzud object, contain this sign in their names. The chambers' shafts are hidden in the masonry of the Pyramid. Some parts of the Anzud device were mounted into the vents of the Granite chamber. Thus, the meaning "enclosed within something" of this sign is consistent with the description of these elements. The value of the second sign, NIGIDAMIN, is the number 4. The third sign, KASKAL/*kaskal*, carries the meaning "way." Thus, the sequence of characters HU.NIGIDAMIN.KASKAL.LUGAL [enclosed, 4, way, device] can be interpreted as "device surrounded on four sides."

The wall of the Water well in the Grotto area is lined with brickwork. The Grotto is accessible through a hole called a "window" in the Sumerian texts. In the 9th line, signs BAD and AB [wall, window] point to these details. It is easy to see that the BAD sign drawing depicts brickwork. Apparently, signs describe a device located in the area of the Grotto (*eridug*^{ki}) and, probably, was working as a pump.



Transcription of lines 9 and 10 from the Weld-Blundell prism by Stephen Langdon.

HU/*pag* enclosed	4	KASKAL *kaskal* way	LUGAL *lugal* [device]	BI/*bi* this	BAD/*bad*$_3$ wall	AB/*ab* window	NAGAR *Nagar* carpenter	KI/*ki* place	ES/*še*$_3$ to/from
					BA	DU bring			

If the image of the second pictogram, LUGAL, is rotated clockwise 90 degrees, it forms the figure of a man wearing a crown. The primary meaning of this sign - "king," "ruler," or "master" - reflects this fact. However, if we use a little imagination, we can also see a vehicle: pointed, streamlined fuselage; pedals on the floor; reclining seatbacks; an open space above the seats for entering the cockpit; and, to the far left, an engine or something similar to rocket nozzles:

Thus, this sign also denotes the concept of "machine." This idea sounds no less fantastic than the 43,200 years of the reign of En-men-lu-an from Bad Tiber. However, in support of such conclusions, we can look at the cuneiform sign of the *i*$_3$ transliteration, which forms the future tense:

LUGAL [*lugal*]	NI [*i*$_3$]

Cuneiform sign NI looks similar to the right portion of the LUGAL sign. If we assume that the LUGAL sign represents a moving vehicle, then its front portion will be in front of the driver, that is, in the future. This part became the prototype of the NI sign used to denote the future tense. Summarizing all of the above, we can conclude that the meaning of the pair of signs NAM-LUGAL can be interpreted as "a machine or device performing a strictly defined sequence of actions." For brevity's sake, let us define the new *nam-lugal* value simply as "device."

We must also clarify the meaning of another repeating pair of terms: *a_2-lu-lim* and *i_3-ak*. The sequence of pictograms *a_2-lu-lim* consists of two signs: *a_2* [strength, power] and *lu-lim* [stag]. The two words "strength" and "stag" can be interpreted in two ways. The first one is the expression "reindeer power," which corresponds to the modern mechanical concept of horsepower. A reindeer, like a horse, is a draft animal and can be used as a live engine. Therefore, the other way it could be translated as "engine."

Another sequence of cuneiform signs that requires clarification is *i_3-ak*. It is composed of two signs, NI and AK. One of the NI transliterations is *i_3* [will, must]. The AK sign has two transliterations: *ak* [to do, to make, to act, to perform] and *$ša_5$* [to snap off]. If we are talking about machines, then we can logically assume that the description would contain information in regards to energy consumption. Therefore, *ak* should be interpreted as "to snap off," which means that the device consumed part of the energy from a power source. Thus, *i_3-ak* can be translated as "will consume" or "must consume."

Having defined these signs, we can now attempt to translate several lines from the Sumerian King List. The first line explains the contents of the list:

The Sumerian King List (c.2.1.1)[5]

1.

[nam]-lugal	*an-ta*	*ed_3-de_3-a-ba*
device	upper-away	ascend-bring-text-to divide

Ascending divided list of automatic machines from Upper (Great Pyramid)[6]**.**

The heading indicates that this is a list of devices contained in the upper part of the Great Pyramid system, listing them from bottom to top. We have already encountered the presence of automatic devices in the Pyramid in the narrative *The Myth of Anzu*, where the Anzu Bird maneuvered pinions.

It is worth noting that transliteration *ed^3* is interpreted as "to descent": "*After the kingship descended from heaven*…,"[7] using its expanded meaning "to go up or down." But I found it is more appropriate to use its initial meaning "ascend"[8] since the first line was assumed to be the

[5] https://etcsl.orinst.ox.ac.uk/cgi-bin/etcsl.cgi?text=c.2.1.1&display=Crit&charenc=gcirc#

[6] The Great Pyramid contains the ramified structure of the passages and chambers which spread even under its base: The Subterranean chamber and the Grotto. One of the meanings of the Sumerian cuneiform sign AN is "upper [http://psd.museum.upenn.edu/epsd/epsd/e347.html]," but it also describes the Great Pyramid itself [the upper part of the ramified structure] with passages and chambers located in its masonry, including the Grotto.

[7] https://etcsl.orinst.ox.ac.uk/cgi-bin/etcsl.cgi?text=t.2.1.1&display=Crit&charenc=gcirc&lineid=t211.p1#t211.p1

[8] http://psd.museum.upenn.edu/epsd/epsd/e1188.html

header, which describes the contents of this tablet. Since this tablet is a kind of list of objects that should be listed in a certain sequence, be it the Sumerian kings or something else, then sign *ed*^{3} specifies the direction of sorting of the listed tablet items. The parameter used for sorting is the location of the item in the Great Pyramid, i.e., from bottom to top or ascending.

The devices installed in the Pyramid are conditionally broken out into two categories. The 41st row of the 1st column of the Weld-Blundell prism repeats the sign sequence *[nam]-lugal an-ta ed*$_3$*-de*$_3$*-a-ba* from the first row. This line opens a list of devices unrelated to the watering system *eridug*^{ki}, listed from bottom to top according to their position in the Pyramid system. The first part describes the devices associated with the *eridug*^{ki} system, which processed waste and supplied water to the Pyramid. The second part describes all other systems: lighting, ventilation, mechanisms of the Locking chamber, and others. Line 42 reports them using the signs *kiš-ki* [totality(all)-system], and therefore the second part is more than ten times longer than the first one:

42.

kiš^{ki} *[kiš-ki]*	*[nam]-lugal-la*
totality [totality-system]	device-by
Whole system by devices.	

The suffix *–la* forms a locative noun case which indicates a location. It corresponds vaguely to the English prepositions "in," "on," "at," and "by." The suffix indicates the location of the listed devices, i.e., they are in the *kiš* system.

The second, third, and fourth lines describe the automatic device, *eridug*^{ki}, which was located in the Grotto, confirming the first line's two statements. Firstly, this document refers to the Great Pyramid, and secondly, it lists objects starting from the lowest level: The Grotto [*eridug*^{ki}] is located at the very base of the Pyramid.

The second line is a subheading that declares which system devices will be listed. In this case, it is the *eridug*^{ki} system. The third and fourth lines declare the amount of energy or power consumption required to operate this equipment:

2.

/eridug^{ki} *[eridug-ki]*	*nam-lugal-la*
Eridug [Eridug system]	automatic-machine-by
Eridug by automatic machines.	

3.			**4.**		
eridug^{ki}	*a*$_2$*-lu-lim*	*lugal*	*mu*	*28800*	*i*$_3$*-ak [AK(ša*$_5$*)]*
Eridug	power-stag[engine]	main	mu	28800	must-to perform [to snap off]
The main engine of the Eridug requires consumption of 28800 *mu*.					

The *eridug*^{ki} system also included another device, Alalgar [*a*$_2$-*lal*$_3$-*ĝar*], which required energy of 36000 *mu*:

5.

a$_2$-*lal*$_3$-*ĝar*	*mu*	*36000*	*i*$_3$-*ak[AK(ša*$_5$*)]*
Power-[to mix]-fluid	mu	36000	must-to perform[to snap off]
Power fluid mixer requires consumption of 36000 *mu*.			

The sequence of the signs *a*$_2$-*lal*$_3$-*ĝar* is of particular interest. They describe the functionality of the second device located in the Grotto. Interpretation of the first, *a*$_2$, and last, *ĝar*, signs do not cause difficulties: *a*$_2$ means "strength" and *ĝar* – "fluid." The entire meaning is contained in the LAL [*lal*$_3$] sign. LAL [*lal*$_3$] means "syrup" and consists of the TA and HI signs:

LAL	TA	HI/DUG

One of the transliterations of the sign HI, *hi*, means "to mix." Thus, the meaning of the sequence *a*$_2$-*lal*$_3$-*ĝar* can be expressed by the phrase "fluid mixer." This device was probably installed in the rubber tank of the *eridug*^{ki} system to mix and crush hard waste and prevent sludge formation. The sixth and seventh lines summarize the total energy consumption of these two devices. A simple addition of 28800 and 36000 gives a total of 64800:

6.		**7**.		
2	*lugal*	*mu-/bi*	*64800*	*ib*$_2$-***ak****[AK(****ša*$_5$*****)]***
2	*device*	[mu]-it	64800	must-to perform [to snap off]
2 devices require consumption of 64800 *mu*.				

Summing up the energy consumption for devices united to perform a common task is a completely natural and logical action. Meantime, if we assume that the given numbers represent the terms of life or reign of different rulers, then there is no point and logic in this action. Let's assume that the rulers *a*$_2$-*lu*-*lim* and *a*$_2$-*lal*$_3$-*ĝar* were relatives, and the addition of the length of their terms in power could symbolize the general rule of their dynasty. But there is no proof of their relationship anywhere. Then what's the point in combining their terms? In addition, the prism lists the names of the Sumerian kings rather dryly, without using laudatory epithets, as is usually customary in such historical documents. This situation does not support the theory that the Weld-Blundell prism contains a list of the Sumerian rulers at all.

The list also contains lines that indicate when a list of one group of devices, united by common functionality, ends and the list of the next group begins. For the *eridug*^{ki} system, confirmation of the end of the description is expressed in the 8th line:

8.

eridug^{ki}	*ba-**šub***
eridug	to lay down
Eridug is laid out (described).	

The subheading or indication of the beginning of a list of a new group of devices begins with the phrase *nam-lugal-bi* [this device, these devices].

9.		**10**.
nam-lugal-bi	*bad*$_3$*-tibira*^{ki}*-še*$_3$	*ba-**de*$_6$**
device-this	bad-tibira-in	to bring
These devices are brought (included) in bad-tibira.		

The following is an example of the end of the Bad Tibira device group list and the beginning of the La-Ra-Ag device group list:

18.

bad$_3$*-tibira*^{ki}	*ba-**šub-be*$_2$*-en***
Bad-tibira	to lay down-to open
Bad-tibira are laid out (described).	

19.

nam-lugal-bi	la-ra-ag^{ki}-še$_3$	ba-**de$_6$**
device-this	[la-ra-ag]-in	to bring
These devices are brought (included) in la-ra-ag.		

In lines #9, #10, and #19, the verb "to bring" [*de*$_6$] is used with the prefix *ba-*, which forms a passive voice and indicates that the action is performed on the subject. Thus, the sentence consisting of the subject *nam-lugal-bi* [this device] and the predicate *[ba-]de*$_6$ [to bring, carry] should be translated as 'this device is included [brought in, listed].

On line #18, the predicate also appears in the passive voice: *ba-šub-be*$_2$*-en*. The suffix *-en* indicates the plurality: this group contains more than one device. This line closes the list of devices that make up the *bad*$_3$*-tibira*^{ki} group.

In the Pyramid, devices were divided into two types. The first type, a group of independent devices, operated in parallel as in the *eridug*^{ki} or *bad*$_3$*-tibira*^{ki} group. Other devices depended upon each other, and their connections were represented as tree structures and were included in the second type of group. The second group of devices is marked with the word ^{ĝiš}*tukul* [tree].

93.

kiš^{ki}	^{ĝiš}*tukul*	*ba-an-**sag**$_3$*
Kish	tree	to disperse
Kish tree structure is dispersed (itemized).		

94.

nam-lugal-bi	*e*$_2$*-an-na-še*$_3$	*ba-**de**$_6$*
Device-this	room-upper-in	to bring
These devices are brought (included) in the upper rooms.		

It is noteworthy that, up to the 41st line, only independent devices are listed, and in their final lines, the word ^{ĝiš}*tukul* [tree] is not used just as the word *dumu* [child, son, daughter] is not used to describe child devices. Although line 15 contains the word ^{d}*dumu-zid*, it is used to describe the device's functionality, not to mark this object as a "child" device.

The system *kiš*^{ki} is described as being organized into a tree-like structure which included 23 devices (90. *23 Lugal-e*). The word *dumu* [child] was used 8 times.

The end of the first part, listing the components of the eridugki system, is also marked by the final lines:

39.

a-ma-ru	ba-**ur**$_3$**-ra-ta**
water-nursery-to pour out	-to shut-to break-from
The breakdown (detailing) of the irrigation of the terraces is completed.	

40.

eĝer	a-ma-ru	ba-**ur**$_3$**-ra-ta**
back, rear; after;	water-nursery-to pour out	-to shut-to break-from
The final: breakdown (detailing) of the terraces watering is completed.		

As we can see, the language of the list is rather dry and stylistically looks more like the language of technical documentation than the literary delights of king's chronicle writers. Moreover, the text of the prism is organized as a kind of sheet with headings, breakdowns into categories, summation, finalizing lines, and other attributes of reporting documentation.

Among the devices included in the *kiš*^{ki} system [*ki*], we find the *mašda* [*maš-da*$_3$] device:

61.

/maš-da$_3$[KAK (du$_3$)]	*dumu*	*a$_2$-tab-ba*	*mu*	*{840}*	*{(ms. Sul has instead:) 720} i$_3$-ak[AK(ša$_5$)]*
/border-[to erect]	branch\	arm-grasp	[mu]	840	{(to slither)} must-to perform[to snap off]
The branch of the portcullis lifter, the grasping arm requires consumption of 840 *mu*.					

The *mašda* object is mentioned in the *Lugal-e*[9] narrative where it was called a "stone." In this case, however, the object suggests that the *Sumerian King List* is not, in fact, a list of Sumerian kings, and the *mašda* stone is not a stone at all. Judging by the description of the *maš-da$_3$* device, which has a holding grip, this device was installed in the *erim$_2$* antechamber[10]. In addition, the accident occurred in the Granite chamber (King Chamber) and did not spread below the Grand Gallery. Consequently, objects located in the Granite chamber were involved in the accident and mentioning the *maš-da$_3$* device only confirms that this device was located in the antechamber and used to lift the portcullises. Three granite portcullises were installed in the Locking chamber. Because the device *a$_2$-tab* was specified as a branch of the *maš-da$_3$* device, we can assume that it contained three grasping arms, *a$_2$-tab*, according to the number of granite slabs.

The list is missing information about the *anzud$_2^{mušen}$* ventilation device, the *šimaški^{ki}* lighting device, and the *duru$_3$-maš* signaling device. All of these devices were located either in or near the Granite chamber. These devices may have been specified or named differently in this list. On the other hand, the tetrahedral clay prism was, unfortunately, partially destroyed, and information about these devices could have been located on the lost fragments.

[9] https://etcsl.orinst.ox.ac.uk/cgi-bin/etcsl.cgi?text=c.1.6.2&display=Crit&charenc=gcirc#

[10] The Ante-chamber, which is located in the Great Pyramid of Giza, and its Sumerian name *erim$_2$* discussed in the chapter *Urim System* in the second part of the book *^{d}nin-ḫur-saĝ: The Treasure of Mankind.*